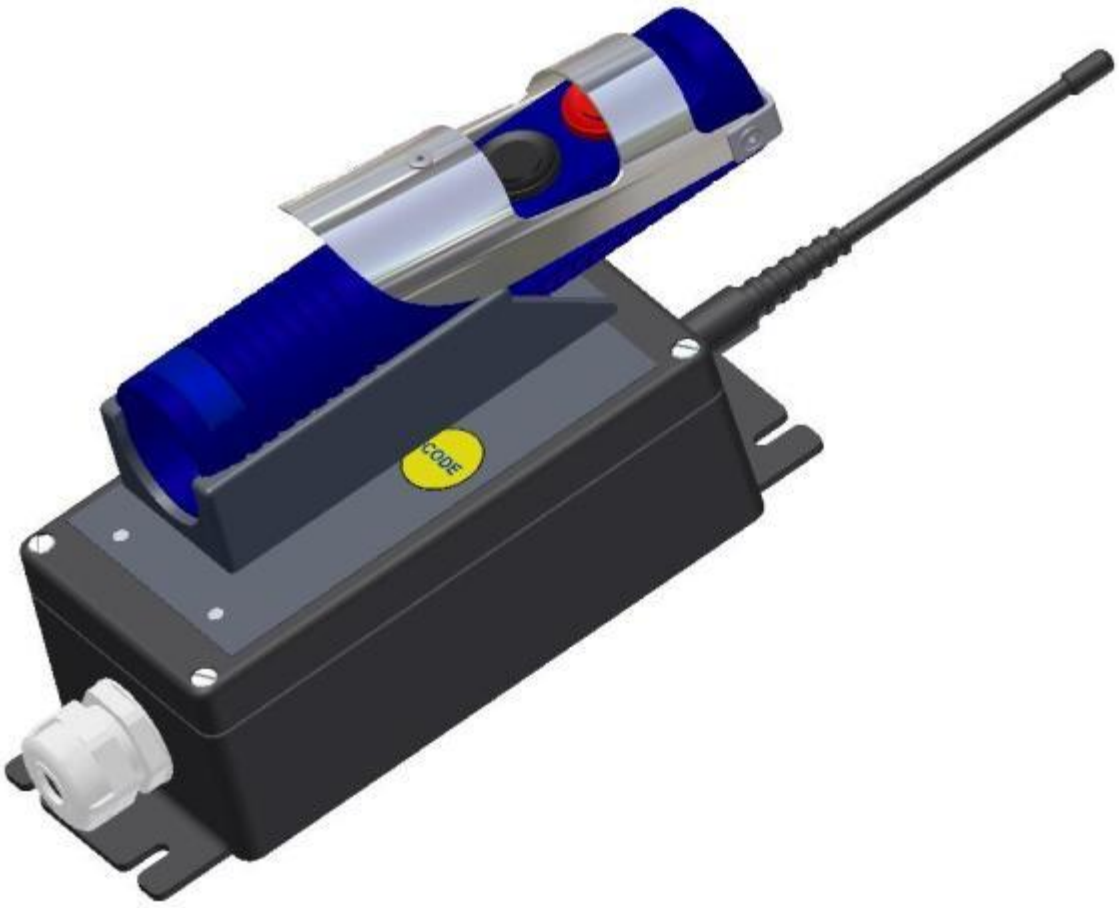
Delta DE212

GLOBAL

Wireless Deadman System DSD

Drivers Safety Device for road tankers
Ex approval: IECEx
For license-free, global operation.
Item no: 02910

Operation and Installation Manual



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1. CONTENTS

1. INTRODUCTION

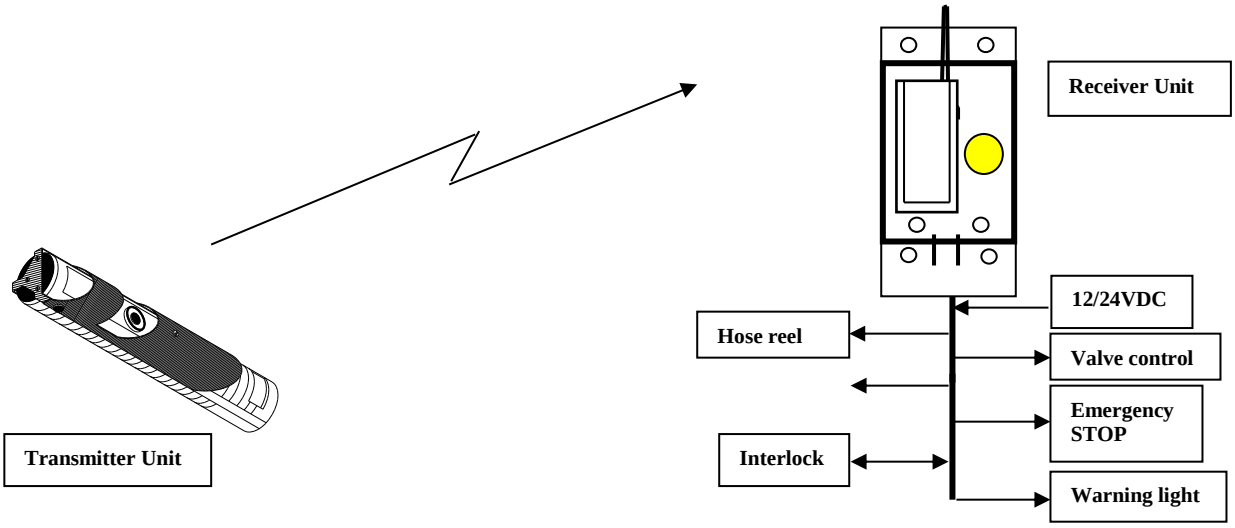
The DE212-2S DSD, is a wireless deadman control system, designed for refuelling from road trucks The handheld deadman switch is Ex approved according to the IECEx regulations.

1.1 SYSTEM HIGHLIGHTS

- Operates wireless up to 30m from the refuelling vessel. Range can be adjusted in receiver.
- Integrated system, all you need for a safe deadman operation is included.
- Several Delta wireless systems can operate in the same area without disturbing each other.
- Wireless operation improves efficiency and operational safety. No cable length limitations to move around the aero plane and no cable to brake.
- No risk for false activation, each wireless handheld unit has a unique code.
- Flexible and modular system, easy to operate and maintain.
- Built in timer, no risk for the operator to manipulate the handheld unit.
- Integrated output for timer warning light and beeper.
- Emergency stop is included.
- Integrated interlock, ensure safe operation.
- Long battery capacity, more than 12 hours with a fully charged battery.
- Receiver has integrated intelligent charger
- Unique coding system between handheld unit and receiver, easy maintenance.

1.2 SYSTEM CONFIGURATION

Wireless deadman



2. INSTALLATION

1.3 INSTALLATION OF THE RECEIVER

Figure 2.1 Receiver and Transmitter in the drivers cabin

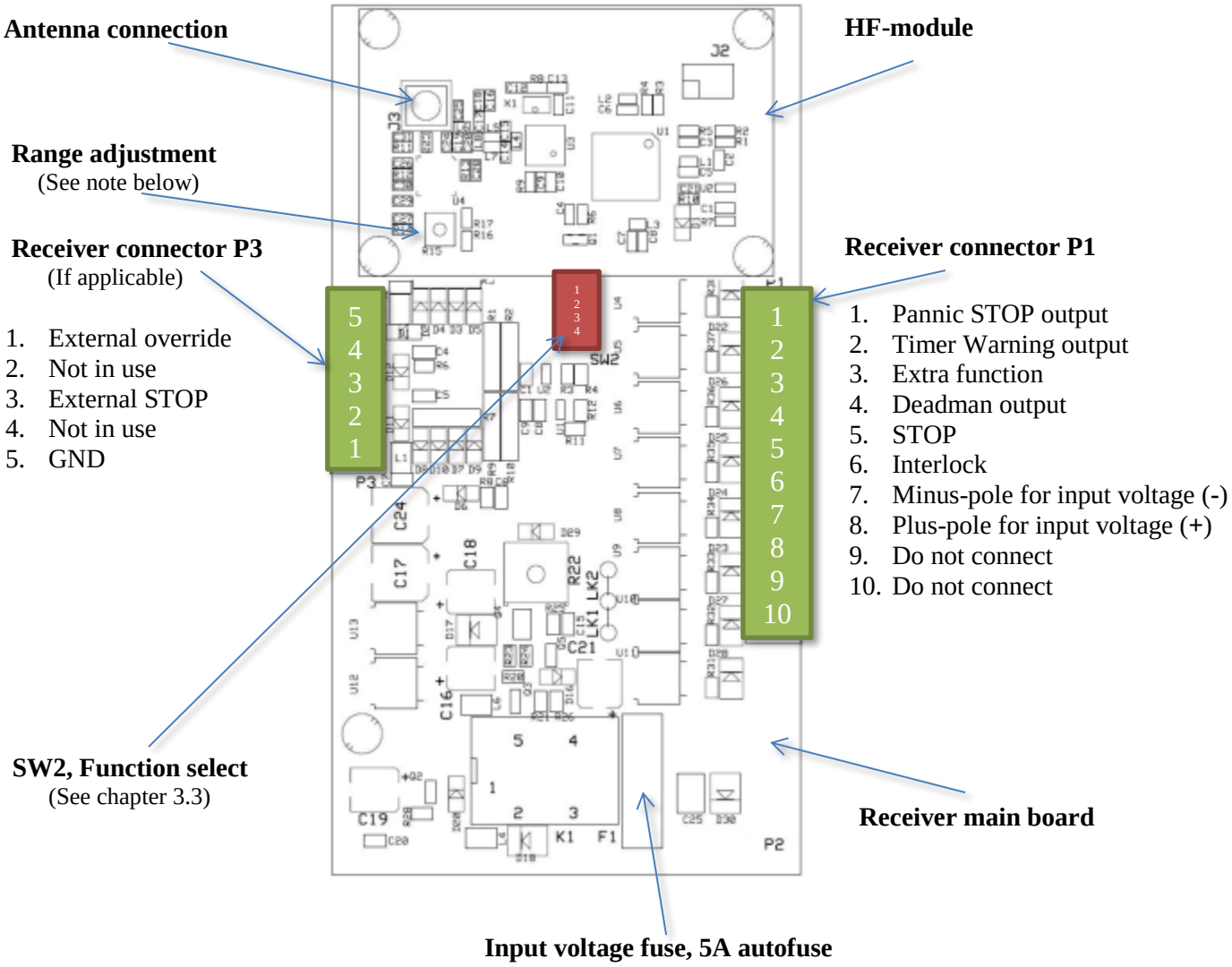
The receiver unit with antenna is normally installed in the drivers cabin, out of Ex defined area.
The receiver must have connection to power supply/battery, 12 or 24VDC, and the fuel valve, controlling the filling of the aircraft.
The receiver front panel is also the charging station for the transmitters battery. It is important that the installation of the receiver is made so that it is easy to reach for the driver, in order to place the transmitter for charging each time it has been used.
The orientation of the receiver is not important regarding the antenna. It must however be considered that a lot of metal close to the antenna could reduce the radio signal strength, and reduce operational range and also the functional stability.
If an external antenna must be used, up to 1,5m from the receiver unit, it must be connected by a coaxial cable, and the antenna must be mounted vertically on a metal base.
If several antennas are installed on the truck, the DE212 antenna should be at a distance to other antennas of no less than 1m.

NOTE: When installing the receiver unit, it should be considered to installed it in a place with temperature within 0 and +50ºC. This is because, the transmitter batteries, NiMH does not charge properly outside these temperatures.
If the temperature is outside these limits, it is recommended to use a mains battery charger, CH300 inside in a controlled temperature area. See section 2.5.

1.4 RECEIVER UNIT CONNECTIONS

All connections to the deadman system are made in the receiver unit.

Receiver connections



Note: From April 2012, the GLOBAL receiver unit can be delivered with a new and important feature; the range can be adjusted to meet the JIG requirements.
This HF-module, 01854-D is located inside the receiver unit, with a potentiometer to set the range. See figure on top.
Turning the potentiometer fully clockwise, the range is at minimum, counter clockwise the range is at max. Factory setting is in the middle position.
Note that the adjustment needs to be done carefully, not to reduce the range too much and hence reduce the stability during operation.
All elder models of the GLOBAL receivers can accept this new module.

In order to get the most stable range between the receiver and the handheld transmitter, it is recommended to install an antenna at the outside of the refuelling truck cabin. With an external antenna the path between the two units is less dependent on radio shielding from the drivers cabin walls and items between the two units.

Connector P1 in receiver	Functional description	Receiver function Select, SW2
1	Panic STOP output	SW2-1: 2 min. timer ON/OFF ON= timer active, OFF=No timer
2	Timer warning output	SW2-2: Extra function simultaneous or not simultaneous operation with the deadman function. ON = simultaneous operation
3	Extra function, for hose reel or pump speed control	
4	Deadman output	SW2-4 For future expansion
5	Normally closed=activated output, opens when STOP is pressed	
6	Interlock (transmitter is charging) Output is active when transmitter is charging	
7	Minus-pole for input voltage	
8	Plus-pole for input voltage	
9	Do not connect	
10	Do not connect	

Receiver connections and functional selection.

Note: When activated, all outputs are 12 or 24V, same as the power supply voltage.

Receiver connections, connector P3:
Note that connector P3 is not installed unless programme 02046 and this functions are ordered.

Functions installed with receiver programme: 02046

Connector P3	Functional description	
1	**External override** **The deadman function is active as long as this input is low, connected to GND**	SW2-3 : External override ON= external override active. OFF=disabled
2	**Not in use, for future expansion.**	
3	**External STOP.** **Stops all functions in the receiver when connected to GND**	This function is always enabled
4	**Not in use, for future expansion.**	
5	**GND, ground or common terminal. Same as P1, term. 7**	

NOTES:
- Input voltage is 11 to 35 V DC. All outputs give input voltage when activated.
- NOTE: Input voltage above 35V, will shut down the receiver.
- Note that the potential between the minus pole and ground, must not be greater than 50VDC/AC peak.
- The timer warning output operates as follows: when the deadman function is activated, the time warning output also go active, supplying 12/24V out. When 30 seconds are left of the 2 min. time period, the standard period, the output change from a steady output, to an off/on signal during the last 30 seconds of the time period. The output is intended for connection to a indicating lamp, visible for the operator. The on/off flashing lamp is intended to warn the operator to restart the time period.
- The timer beeper output is active only as long as the warning signal is flashing.

If external connection box is delivered, the connections are as follow:

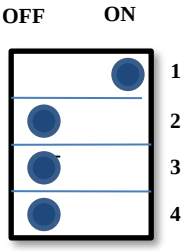
Cable marking	Receiver connector connection	Function
YE-GN		Not in use
6	6	Interlock
5	5	STOP
4	4	Deadman output
3	3	Extra function
2	2	Timer warning
1	1	Timer beeper
7	7	Minus-pol, spenning inn
8	8	Spenning inn, 12/24VDC

1.5 CHANGING THE FUNCTION OF THE RECEIVER UNIT BY SW2.

From May 2007, a new software, item nr 02017, was introduced in the receiver unit.
With this software, the function of the receiver unit can be changed according to operational requirements.

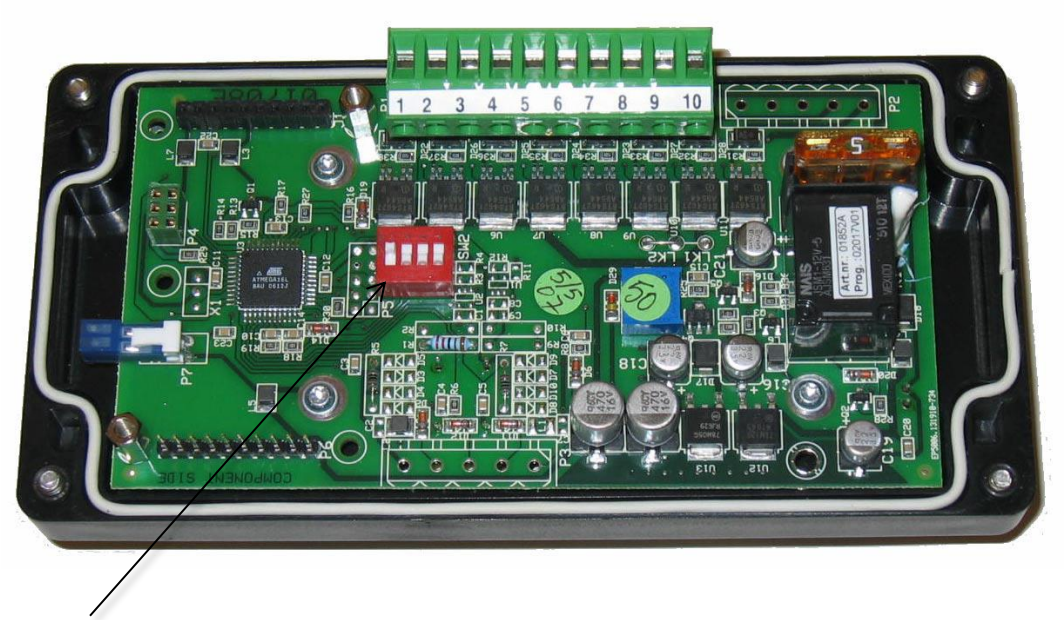
The following can be changed:
**SW2-1: Timed or no timed deadman. ON is activated.
** SW2-2: Simultaneous or not simultaneous operation of the extra function, connection P1-3. when the deadman is activated.
** SW2-3: External override, active or off.

Standard factory setting of SW2 switches:



1. Deadman timer enabled, 2 min timer (Default „ON“)
2. Not simultaneous operation of extra function (Default „OFF“)
3. Deadman override input disabled (Default “OFF”)
4. Not in use (Default “OFF”)

1. Set the function switch, SW2 to the desired position
2. Take out the fuse, F1.
3. Press the receiver front button CODE while replacing the fuse. Press the CODE button for about 3 seconds, then the function is changed according to settings.



SW2 Switch for function selection
NOTE: The connector P3 for external override and STOP is normally not installed
This functions must be specified when ordering.

1.6 EX CERTIFICATION.

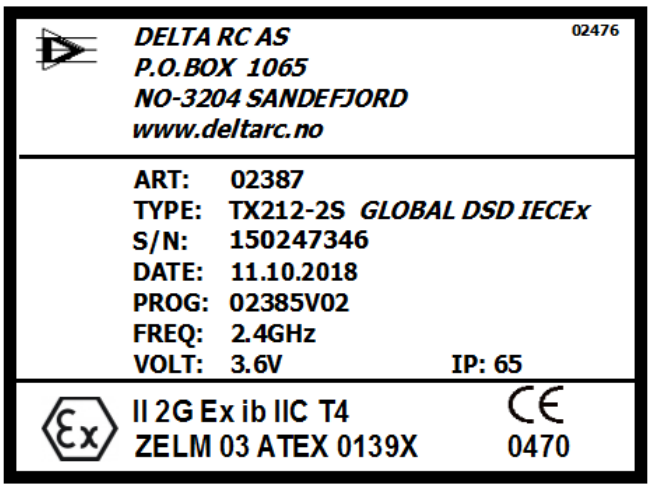
The handheld unit, the TX212 transmitter is Ex approved, to verify this, look at the identification label located under the handle.
Note that the certification is no longer valid if the TX212 is repaired by an un-authorized workshop, or if the instruction given in this document is not followed.

The Ex-standards applied for this certifications are:
IECEx: IEC 60079-0 Ed.5 and IEC 60079-11 Ed. 5
IECEs certification: IECEx ZLM 13.0005X

The label tells the name of the producer and that the unit has an ATEX and IECEx certification, and is allowed to be used in Ex environment, Zone 1.

The ART: is the article number of the product
The TYPE: is TX212-2S, given that it is a transmitter of the DE212 system. 2S says that it has two functions and STOP.
The S/N: is the serial number of the unit, which is a unique number.
The DATE: gives the production date.
The PROG: gives the software version of the transmitter.
The FREQ: gives the radio frequency of the transmitter.
The VOLT: gives the nominal battery voltage.
The IP: gives the protection grade of the transmitter

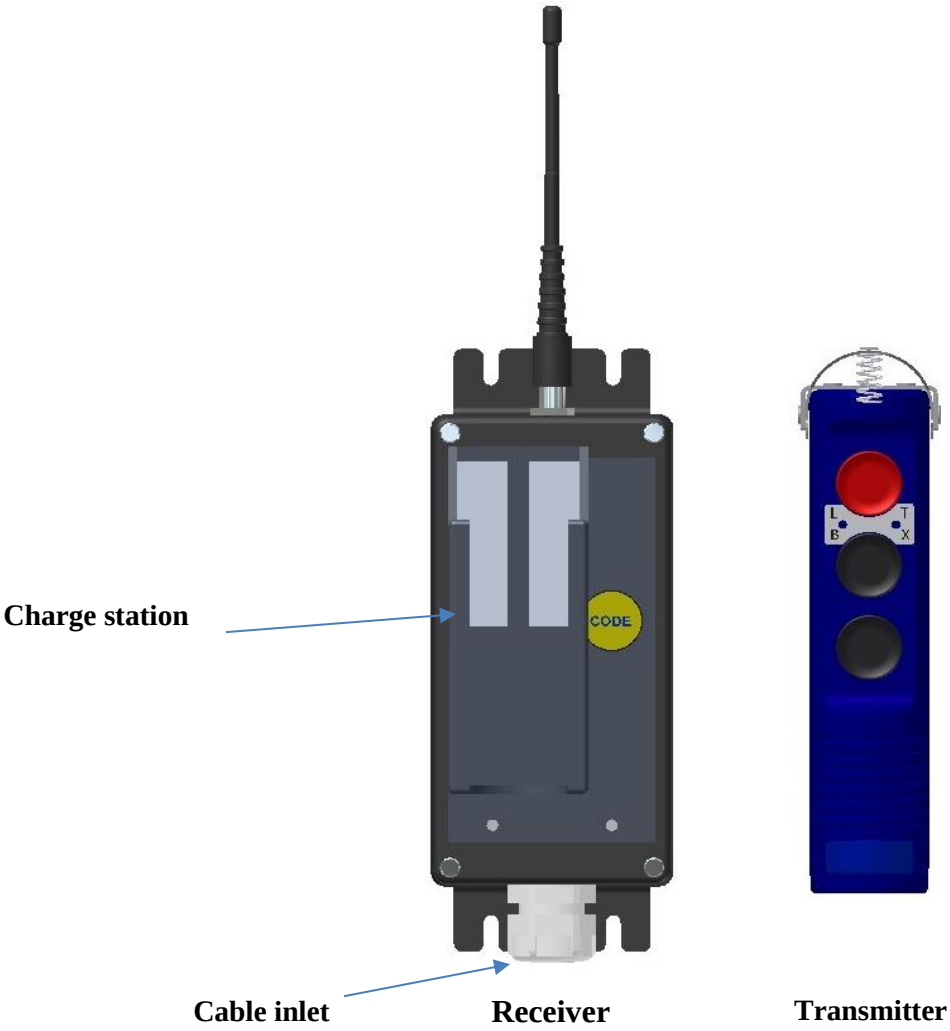
TX212-2S RT identification label:



2. OPERATION

2.1 UNIT DESCRIPTION

System units

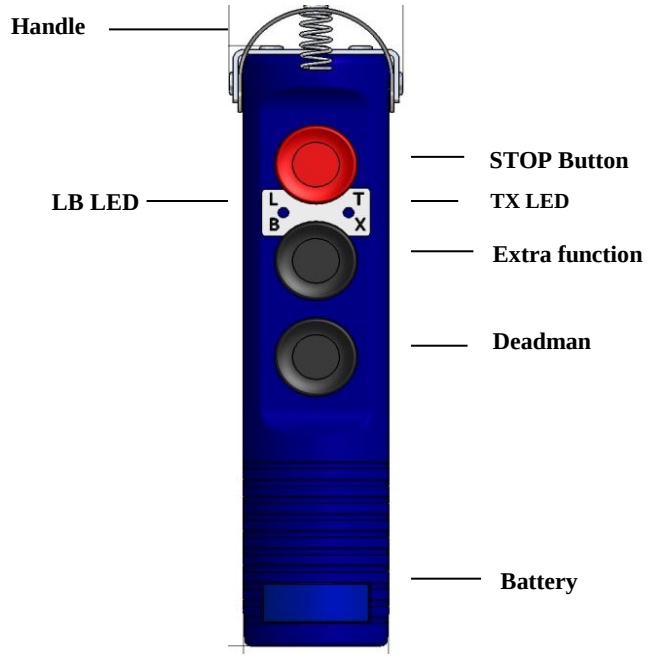


The system unit includes the following parts:

- Portable and ergonomic transmitter or hand switch, with build-in battery and antenna..
- Receiver for fixed installation, with antenna connector, and cable gland for connection cable.
- Approx. 14 cm long antenna for installation on top of the receiver. OPTIONAL: external antenna with 3m cable for external mounting.
- Delta CH300, 115/ 230V mains-powered battery charger for transmitter, OPTIONAL. See section 5.2.

2.2 FUNCTIONAL DESCRIPTION

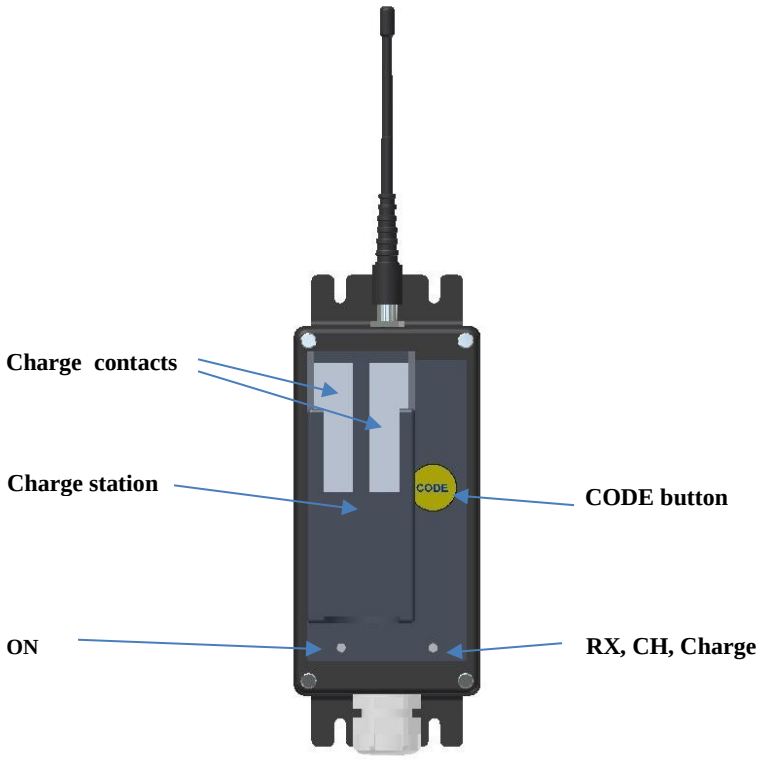
2.2.1 TRANSMITTER UNIT:



The transmitter is controlled by a small microprocessor. It is always turned on in a standby mode, and will therefore discharge the battery after 3 to 5 months, depending on the state of the battery, if it is not recharged during that period of time.
A fully charged battery have a capacity of at least 12 hours of continues operation. The long operating time is made possible by the Delta timeshare transmission system, WTT.
The battery is charged by the stainless steel contacts at the back side of the transmitter. The transmitter must be charged on the charge station on the receiver front panel, or on a mains battery charger, CH300 delivered by Delta. The charging connections, are protected from discharging of the built-in battery.
The deadman push-button is activated by a stainless steel handle. When pushed, the transmitter stays active for 2,5 seconds without any action from the operator. To stop the function, press the second button the Extra function. In addition to stop the active function, it will also activate the extra function output as long as it is pressed.
The radio signal activates an output circuit in the receiver, supplying the output or the deadman function on the receiver's connector. This is the output for the deadman button for refuelling.
If the STOP-button is pressed, all function stops instantly and the normally operated STOP output, used for emergency stop, in the receiver goes off as long as the button is pressed.
The third push-button called, extra function, is used for stopping the deadman output from the running transmitter, and also activates the Extra function output as long as operated. Note that this function is on the standard delivery not possible to operate simultaneously with the deadman function. For simultaneously operation, the receiver must be reprogrammed.
There are two light diodes, LED on the front panel marked "TX" and "LB".
The TX LED is yellow and is blinking when the transmission is active, and will continue to blink for a short time after the operative push-button is released, sending an active stop signal to the receiver.
The LB LED is a dual function LED. It blinks with a red light when the battery is at low voltage or capacity, and should be recharged. The transmitter can be used for about 15 min. after the red LED is turned on. At a lower battery voltage, the TX LED is turned off, indicating that the transmitter have stopped transmitting.
During normal operation, the LB LED is flashing green, indication that the connection with the receiver is good.

The LB red LED is active only when the transmitter is activated. By pressing the Stop- button, the battery can be tested during active transmission.
The Stop button, or PANNIC button, turns off the functions in the transmitter and sends an active STOP, turning instantly off all the functions activated in the receiver. When the PANNIC button is pressed, the output PANNIC/ STOP is activated giving an intermitted output to give a warning to the operator. This PANNIC situation is reset by a second press for 2 seconds, ot the Stop/PANNINC button. Then the system is now ready for normal operation.
If the deadman button is stuck, and the Stop-button is pressed, the transmitter can not be operated again before the damaged button or switch is changed. Transmitter operation in low temperatures, lower than -20°C can be performed, but not for a long period of time. The transmitter must be warmed and charged at temperatures higher than 0°C when not in use.
Under normal use, the battery lifetime is 2-3 years.

2.2.2 RECEIVER UNIT:



The receiver front has a charging station for the transmitter unit, two LED indicators and one push button marked “CODE”.
The energy charged to the battery, is calculated according to the time the transmitter have been used. This will ensure high capacity and reduced overcharging of the battery.
The CH LED has three stages when the transmitter is placed to charge:

1. CH is dark. No action.

2: CH burns continues. Full charge current.
3: CH flashes. Indicates trickle charging, battery is full according to the last operation.
The green light diode, marked ON, indicates that a correct voltage is supplied and the receiver is ready for operation. When coding the receiver and transmitter, this green LED flashes three times when the code is accepted and stored in the receiver.
When the receiver is in operation, receiving an accepted telegram from transmitter, the yellow CH LED is flashing rapidly.

2.3 CODING THE TRANSMITTER AND RECEIVER UNITS

In order to make the receiver execute a function, the code in the handheld unit, the transmitter, must be transmitted to the receiver and correspond with the code stored in the receiver.
The DE212 system has 65536 different codes available. Each code and serial number is logged by he producer, and a code is only used once. The transmitter is coded from the factory, while the receiver must be coded by the user before starting operation as follows:
Press the yellow CODE button on the receiver front panel. Simultaneously press the red transmitter STOP button. After about three seconds, the green ON-LED will flash three times, indicating that the code is stored. The system is now ready to operate. The code is stored in the receiver even if the power is turned off.

Erasing the code:
The stored code in the receiver is erased by pressing **first** the deadman button on the transmitter then the CODE-button in the receiver, after some seconds, the green ON flashes 5 times, and the code is erased. To maintain normal operation again, the receiver must be re-coded.

2.4 MAINTENANCE

This equipment should be kept as clean as possible at all times.
The transmitter, TX212 is an Ex, IECEx classified unit, which can be used in hazard areas, zone 1. This classification needs a special attention from the owner and user.
The TX212 design, both the electronic- and the mechanical part, is designed and controlled to meet the Ex requirements. To keep the classification, and the safety level, the TX212 unit should be inspected regularly .
In case of a damage of the TX212, it should be send for repair to Delta RCS or an appointed service station immediately . All services and repair actions of the unit, will be stored at the repair station, and by Delta RCS store. In case of an accident, it is possible to see the "history" of the unit.

Do not operate a TX212 which has a damaged housing.
A damaged unit must be taken out of service, and send for repair.

Damages like cracks or holes in the cabinet plastic or rubber, are a safety risk and must be repaired before further use.
The operator or owner can only change the battery module, following the instructions in chapter 4.

IMPORTANT NOTE:

Any unauthorized attempted repair, modification or other alterations of the product without prior written permission from Delta RCS AS will render both IECEx approvals and warranties invalid, and the responsible operator/owner will be held liable for any damages or injuries which may occur.

Delta RCS AS shall not be liable for reimbursements, claims and damages that may result from the unauthorized repair, modifications or alterations of the product.

2.5 BATTERY RECHARGING

1. Before the transmitter is used for the first time, it should be recharged with continues charging for 3 hours. Place the transmitter in the charger on the receiver. Wait 30 seconds till the CH lamp start flashing, press the CODE button on the receiver for some seconds, and the CH lamp will start to light constantly, indicating that the transmitter battery is charged with maximum current. If the transmitter is left in the charger, this state will last for 3 hours leaving a completely fully charged battery. Note, if the battery is not completely empty, two hours charging is normally sufficient to start operation. Do not repeat the 3 hour full charging unless the red LB lamp on the transmitter is flashing.
2. When the transmitter is placed on the receiver charge station, the transmitter battery will be recharged according to the duration the transmitter have been used. The recharging will replace the used battery energy actually used during operation. This type of charging will secure maximum battery capacity and lifetime. Every time the transmitter is placed in the charger, it charges for 30 seconds with full current. After 30 seconds, and if the transmitter is unused, the charge current is reduced to maintenance charging and the CH lamp will start flashing.

   If the transmitter has been in operation longer than 5 minutes, the CH lamp will light constantly, indicating that charging is at full current. When the battery energy has been restored, charging is reduced to maintenance as long as the transmitter is in the charger. If the power of the receiver is switched off, stored information regarding transmitter operation time, is erased.

3. The charging of the transmitter battery is controlled by the software in the receiver, and it is recommended always to leave the transmitter for charging. The charging current is limited to 50mA during full charge, and the charging time is regulated by the receiver software. The battery temperature will never rise above +50ºC and will not be a hazard for the EX environment. In case of a short circuit of the battery connections, a build in temperature and current fuse, in the battery will secure a temperature allowable in EX environment.

   With a fully recharged battery the operational time is 12 hours. This means that the deadman button on the transmitter might be held operated for 12 hours before it stops transmitting.

   Note that operation of the transmitter in low temperatures reduces the capacity of the battery down to 30% of normal capacity at room temperature. At temperatures lower than -20°C, the battery may “freeze” and loose all its capacity.

4. **NOTE:** Charging the battery, should take place at temperatures not lower than 0ºC and not higher than +50ºC. Charging outside these limits will results in very low charging current, or no charging of the battery at all. The battery will however not be damaged.

   When operating at low temperatures, lower than 0ºC, do not leave the transmitter in a cold drivers cabin overnight or for a long period of time. Take the transmitter inside to keep the battery warm. Charging of the transmitter will normally be finished before the car is back to the depot.

   It is recommended to use a CH300-230/115V mains charger, if the receiver is installed so that the temperatures often is outside the recommended temperatures.

   Use only Delta chargers for charging the transmitter, other chargers might overload the battery and the IECEx certification is no longer valid.
5. The type of battery used is a 3,6 V NiMH accu. The battery is a part of the end section of transmitter house. The connection to the printed circuit board is by a small connector. Defective batteries must be disposed at a proper place, where batteries can be disposed A normal lifetime for a battery is approximately 500 recharging.

   NOTE: Repair of the TX212 must take place at Delta RCS or by a Delta RCS appointed dealer. Otherwise IECEx certifications is no longer valid.

3. REPLACING THE BATTERY

Note: The battery module 02465 has an integrated fuse. This fuse will brake and disconnect the battery power from the connector if overloaded. The inside fuse can not be replaced, the complete battery module must be replaced.

***The battery module 02465 and all replaceable parts of the transmitter, must be original parts* delivered by Delta RCS AS. Otherwise the Ex certifications are lost, and the customer has to take all responsibilities. The operator is allowed to change the battery module and nothing else.**

From December 2013, the battery module is changed, in accordance with the IECEx certification. The new battery module for IECEx is: 02465.

The battery replacement operation must take place outside Ex-area.

When the battery module has to be changed, it has to be done as follows:
** Verify that battery module 02465 is replaced by 02465 and no other versions of the battery module.
** Open the bottom end of the transmitter, by pressing the two lock-sections in.
** Pull the battery module gently out of the housing without jamming the O-ring.
** Disconnect the battery from connector marked "3" on the PCB, by lifting the connector up.
See section 5.3.2
** Put a thin layer of Vaseline on the new battery module O-ring
** Connect the new battery, and push the battery module back into the housing. Make sure that the O-ring and connecting wires are not jammed during this operation.
** When the operation is finished, charge the battery for 3 hours, and test all functions.
See section 2.5

4. OPTIONS, ADDITIONAL EQUIPMENT AND SPARE PARTS.

4.1 OPTIONS

The DE212 is a deadman control system designed for aero plane refuelling trucks and dispensers.

Both the receiver and transmitter are controlled by a microprocessor, making it possible to tailor special functions for a customer.

The following units of the DE212 GLOBAL are available:

Order number	Functional description
02387	Transmitter TX212-2S Global RT. IECEx approved
02427	Receiver RXA6 Global RT
02910	Complete DE212 Global DSD system

Note: The receiver has in a standard delivery with functions as follows:

** Timer controlled deadman, controlled from the transmitter. Running for 2,5 min. continuously. Warning light tells operator 30 sec. before the end of the 2,5 min. to restart timer by a short push on the deadman handle.

**** An interlock output signal when the transmitter is placed in the charge station on the receiver front.

**** **Emergency STOP.** An output signal as long as power is on. The output is switched **off** when the STOP button on the transmitter is pressed.

4.2 ADDITIONAL EQUIPMENT

The standard delivery of a deadman control system comprises one receiver, one transmitter and an

145mm antenna for installation on top of the receiver. For an installation require more than this, the following are available:

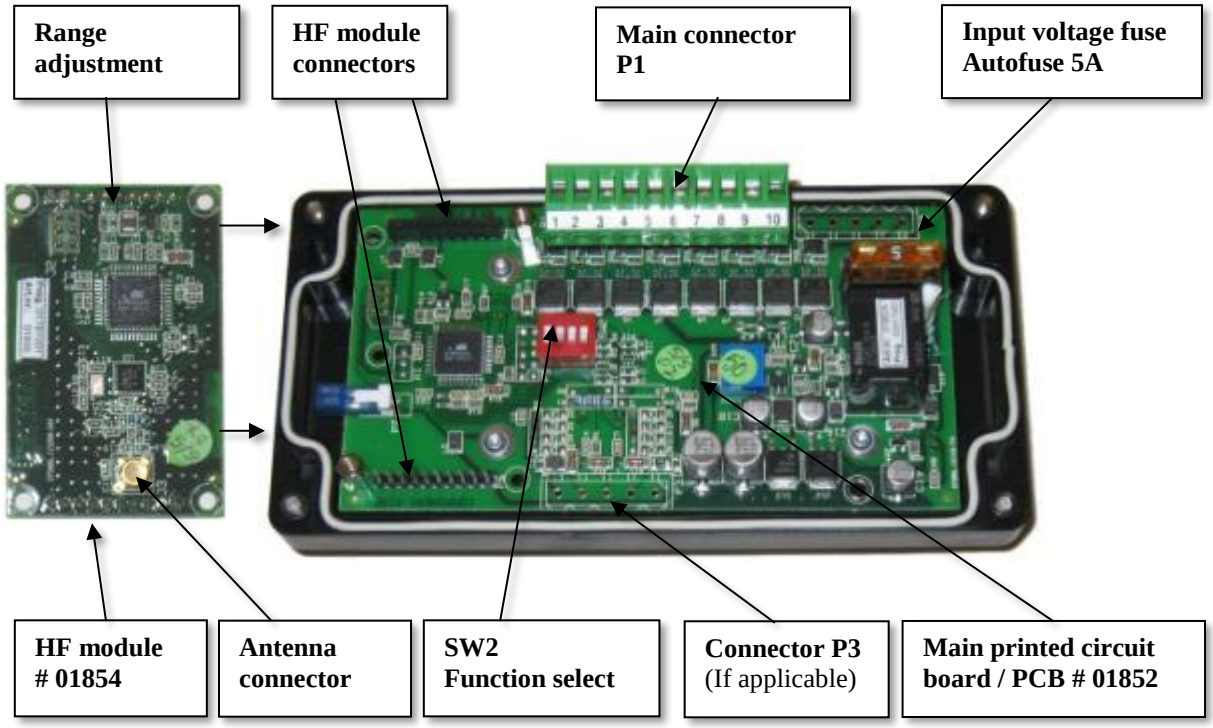
Order number	Item description
01780	Transmitter Charger CH300-2 110/230V AC.

4.3 SPARE PARTS

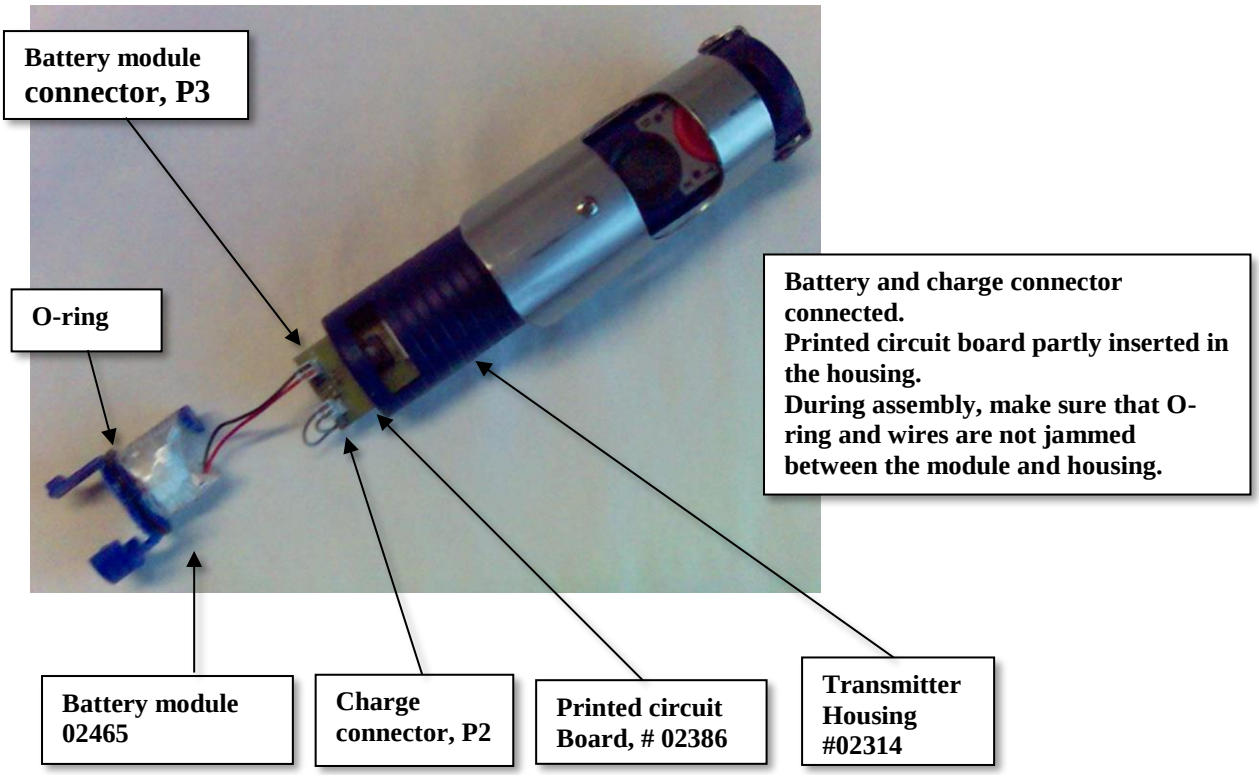
The following spare parts are available:

Order number	Item description
02386	Transmitter PCB TX212Global DSD 2,4GHz w/extra function. IECEx approved.
02314	Transmitter housing TX212 Global DSD, CH2 with stainless steel handle.
02465	Transmitter battery module 3V6 NiMH 300mAh TX212. IECEx approved.
	Receiver PCB RXA CH2-1806 R:A
01854	Receiver PCB HF-module Global 2,4GHz. From April 2012. With range adjustment
02345	Receiver PCB HF-module Global 2,4GHz. No range adjustment
01760	Receiver charge holder without charging contacts
01752	Receiver charging contacts, left contact
02063	Receiver charging contacts, right contact
01775	Receiver internal antenna cable with FME connectors
11990	Antenna for external installation, including 3m cable with FME connector

4.3.1 Receiver front unit, parts identification



4.3.2 Transmitter parts identification



5. WARRANTY CONDITIONS

Complaints
When receiving the product the buyer must inspect it, and eventually complain any obvious faults or missing items within 8 days from reception. Acceptance of complaint will otherwise not be considered. Complaints of any faults that could only first be discovered after mounting and testing the product must be reported at once.

Warranty
The warranty covers only damages caused by material faults and manufacturing errors.
The guaranty ceases 12 months after the delivery date.
Delta RCS AS or appointed repair workshop, is bound to repair and replace defect parts in its products, free of charge, in its main workshop during its normal working hours. Packages being sent to and from Delta are in the responsibility of the purchaser, as he is also economically responsible for paying the transportation charges, toll, insurance and other charges related.
Should the warranty repair be done at the customer's location, there will be charges for cost of travelling, accommodation and dieting, conforming to the government's assertions. There will also be an additional charge of 50% of travelling time by the current repair regulations.
The warranty is cancelled if:

a) There has been done any modification or attempts in the product without a written permission from Delta RCS A/S.
b) The product has been handled wrongly or has not been maintained properly.
c) The payment conditions have not been fulfilled.

Repair work
NOTE: DE212 transmitters, TX212-2S are Ex, IECEx approved. This means that repair work on the transmitters **must** be performed by Delta RC AS or by a Delta RC AS appointed repair workshop. If repair of an Ex approved part is done by a non appointed repair workshop, the Ex approval is lost, and the customer must take all responsibility.
Note that for the TX212 transmitter, the customer can change the battery unit **only,** according to instruction in chapter 4.
Repair work done after the warranty period is charged at full cost. Packages being sent to and from Delta's workshop are on the purchaser's cost and risk.
If the repair work is done at the customer's location, by Delta serviceman, there will be charges for costs of travelling, accommodation, dieting, travelling time and hours of work.
Warranty exceeding 3 months after repair work is limited to cover only the fault that was repaired. A new fault after the repair must be pointed by the customer.
Any other defect or missing part during this period is not covered by the warranty. Should Delta offer a service unit during the warranty time, the purchaser pays for the transportation, insurance and a weekly rent.

5.1 APPROVED SERVICE STATIONS

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5.2 AGENTS

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Fax: 787-998-4450
E-mail: mcmurray@safefueling.com

6. TECHNICAL DATA

This equipment complies with the following standards:
Europe/EU: ERC 70-03 EN 300-400. USA: FCC 15.249. Japan: STD-T66.
It is in accordance to EU's demands in order to label the equipment with CE.

Transmitters are IECEx approved, according to:
IECEx: IEC 60079-0 Ed.5 and IEC 60079-11 Ed. 5
IECEx certification: IECEx ZLM 13.0005X

General Specification

- Frequency: 2,4 GHz
- Modulation: GFSK
- Coding: Digital coding, 65.536 different pre-set codes from manufacturer.
- Functions: Three functions, Deadman, STOP and one extra.
- Temperature Range: Operational: -20 to +50º C. For lower temperature, contact producer.
  Storage: -40 to +65º C. Charging: 0 to +50º C.
- Shock Resistance: 1 m free-fall on concrete floor.

Receiver

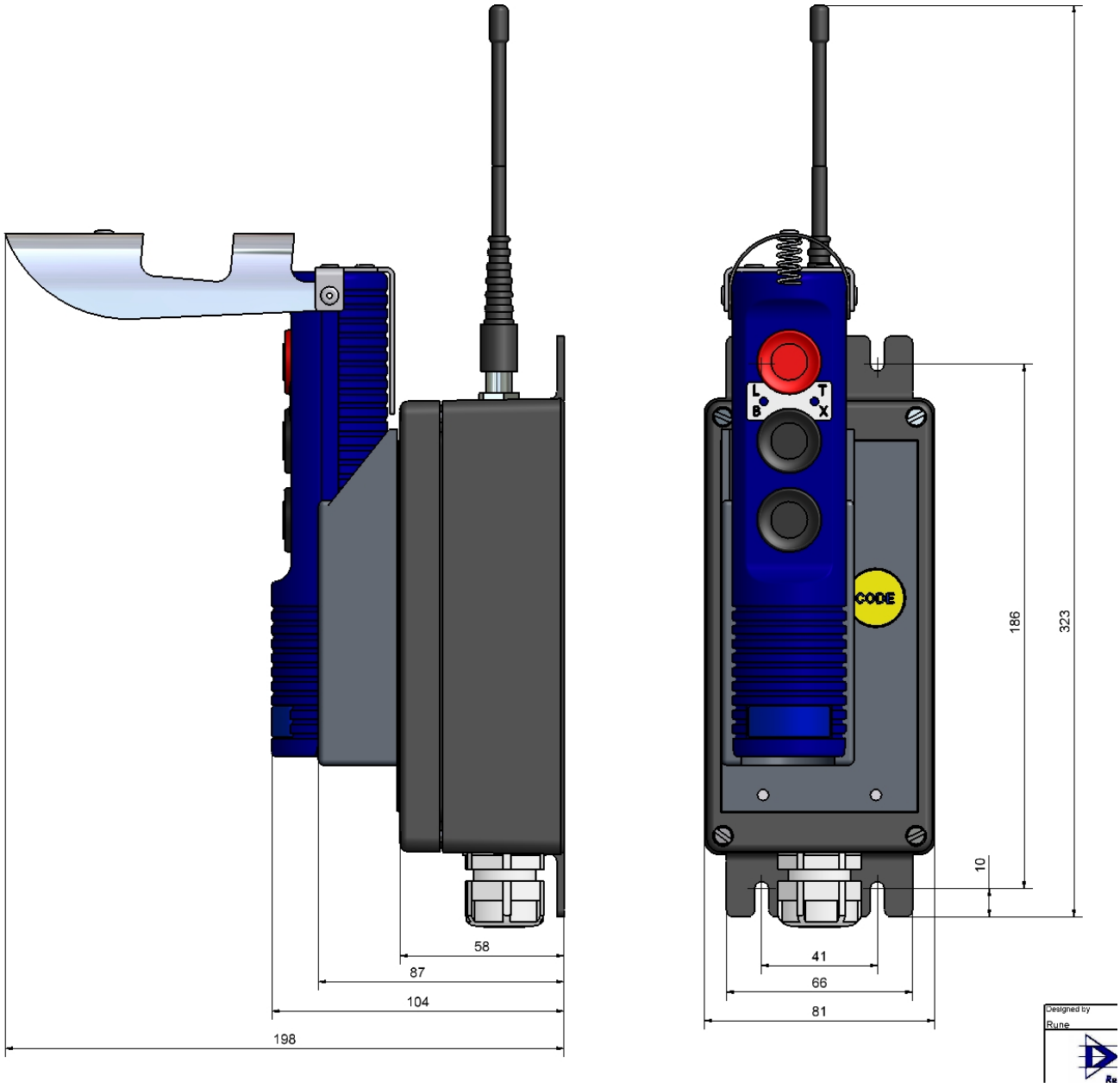
- Antenna External standard aerial, 14,5 cm long. With FME connector on receiver top.
- Power Supply: 11 to 27 V DC. Voltage above 35VDC shuts down the receiver.
- Power Consumption: Standby: 55mA.
  During full charging 110mA.
- Outputs: Semiconductor. 2A, each. 12/24 V DC output when active.
  - Deadman output.
  - Interlock, output when transmitter is in the charging station.
  - Timer warning signal.
  - Beeper warning output.
  - Normally closed output, opens when STOP is activated.
- Transmitter charging Front panel charging station for transmitter, max current 50mA.
- Connections: Screw terminal on PCB connector.
- Controls: 1 push-button CODE, for coding to the transmitter.
- Indicators: Green light diode that indicates power on.
  Yellow light diode that indicates recharging and in operation.
- Housing: ABS polycarbonate, class IP52.
- Dimensions: L:160 mm, W: 80 mm, D: 60 mm.
- Weight: 0.3 kg

Transmitter

- Output Power: max. 1mW/0dBm
- Antenna: Internal.
- Power Supply: 3,6 V NiMH battery, 300mAh. Rechargeable by external contacts.
- Charging Constant current charging, 50mA controlled by charging station on receiver front panel. Charging contacts protected against short circuit. The battery characteristics requires charging between 0 and +50ºC.
- Controls: Three push-buttons: deadman button, extra function and STOP button. The deadman button is operated by a stainless steel handle.
- Indicators: TX: Yellow light diode that indicates active transmission. LB: Dual colour LED. Green LED, that indicates good connection with the receiver. Orange LED, indicates low battery, recharging is needed.
- Housing: Polyamide 6, class IP65.
- Dimensions: Length: 170 mm, diameter: 40 mm.
- Weight: 0.3 kg incl. Battery.

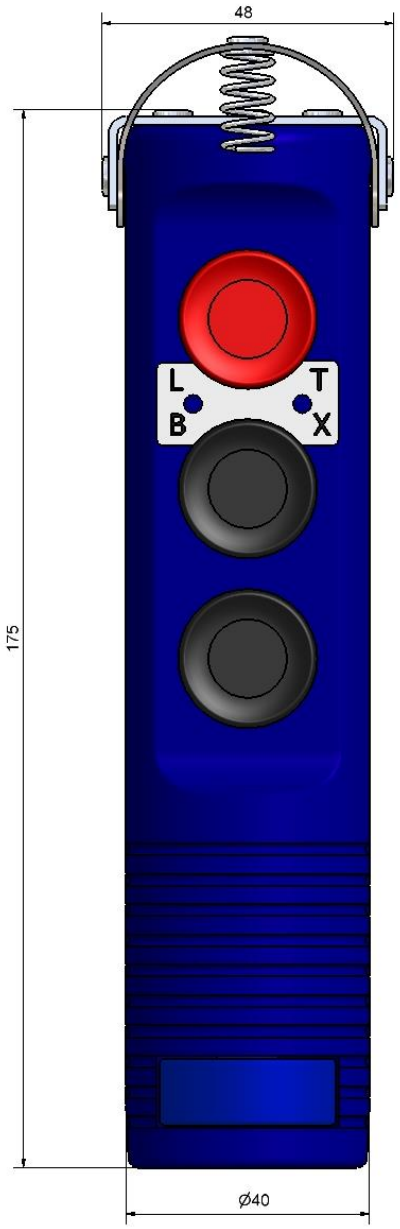
6.1 DIMENSIONS

Receiver and transmitter unit



Note: Dimensions in mm.

Transmitter unit



Note: Dimensions in mm.